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## Claims

- 495 1. A permanent-magnetically excited electric machine comprising a stator part (2) and a moving part (30) movable relative to the stator part (2), as well as an air gap (8) between the stator part (2) and the moving part (30), with one of said stator part (2) and said moving part (30) having a flux path assembly for magnetic flux and winding coils (6) and the other one of said stator part (2) and said moving part (30) having a flux path assembly for magnetic flux and permanent magnets (36),
- 500 characterized in that there is provided a flux conduction liquid (18) that is conductive for magnetic flux; and that in the region of the flux path assembly of the stator part (2) and/or of the moving part (30), there is provided at least one filling space (12; 16; 20; 38; 46; 48; 50) which, for changing the magnetic flux conductivity of the flux path assembly, may have optionally more or less flux conduction liquid supplied (18) thereto.
- 505 2. A machine according to claim 1,
- characterized in that supplying of more or less flux conduction liquid (18) to the filling space comprises the utilization of a number of discrete filling states of the filling space, preferably at least the filling state "full" and the
- 510 filling state "empty".
3. A machine according to claim 1,
- characterized in that supplying of more or less flux conduction liquid (18) to the filling space comprises the utilization of a continuous range of filling
- 515 states of the filling space, preferably inclusive of the final filling state "full" and the final filling state "empty".
4. A machine according to any of claims 1 to 3,
- characterized in that the flux path assembly provided with winding coils (6)
- 520 is provided with interruptions (12) of the flux path assembly that serve as filling spaces.

5. A machine according to any of claims 1 to 4,  
characterized in that the flux path assembly provided with winding coils (6)  
525 is provided with local recesses (20) of the magnetic flux cross-sectional  
area that serve as filling spaces.
6. A machine according to any of claims 1 to 5,  
characterized in that the flux path assembly provided with winding coils (6)  
530 is provided with an under-dimensioned solid-material flux path assembly  
and at least one filling space for large-area up-dimensioning of the flux  
path assembly.
7. A machine according to any of claims 1 to 6,  
535 characterized in that the flux path assembly provided with permanent  
magnets (36) is provided with interruptions of the flux path assembly that  
serve as filling spaces.
8. A machine according to claim 7,  
540 characterized in that circumferentially magnetized permanent magnets (36)  
and flux conduction elements (40) are provided between two adjacent  
permanent magnets (36) each; and that distance spaces (46) between  
permanent magnets (36) and flux conduction elements (40) are provided as  
filling spaces.
- 545
9. A machine according to any of claims 1 to 8,  
characterized in that the flux path assembly provided with permanent  
magnets (36) is provided with local recesses of the magnetic flux cross-  
sectional area that serve as filling spaces.
- 550
10. A machine according to any of claims 1 to 9,  
characterized in that the flux path assembly provided with permanent  
magnets (36) is provided with an under-dimension solid-material flux  
path assembly (32) and at least one filling space (38) for large-area up-  
555 dimensioning of the flux path assembly.

- 560 11. A machine according to any of claims 1 to 6,  
characterized in that circumferentially magnetized permanent magnets (36)  
and flux conduction elements (40) are provided between two adjacent  
permanent magnets (36) each; and that on the side of the permanent  
magnets (36) and the flux conduction elements (40) directed away from the  
air gap, there is provided at least one filling space for optionally providing a  
magnetic shunt.
- 565 12. A machine according to any of claims 1 to 11,  
characterized in that the filling space is connected to a circuit of the flux  
conduction liquid (18).
- 570 13. A machine according to any of claims 1 to 12,  
characterized in that the moving part (30) has at least one filling space; and  
that a pump for conveying the flux conduction liquid (18) is arranged on the  
moving part (30).
- 575 14. A machine according to any of claims 1 to 12,  
characterized in that the moving part (30) has at least one filling space; and  
that a pump for conveying the flux conduction liquid (18) is arranged  
separately from the moving part and is connected to the filling space via at  
least one passageway permitting relative movement.
- 580 15. A machine according to any of claims 1 to 14,  
characterized in that the filling space and the flux conduction liquid (18) at  
the same time are constituent part of a cooling system of the machine.

## PATENT COOPERATION TREATY

Rec'd PCT/PTO 8 JUN 2004 From the INTERNATIONAL BUREAU

10/500402

NOTICE INFORMING THE APPLICANT OF THE  
COMMUNICATION OF THE INTERNATIONAL  
APPLICATION TO THE DESIGNATED OFFICES

(PCT Rule 47.1(c), first sentence)

To:

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EINGEGANGEN

24. Juli 2003

DR. KLUNKER  
DR. SCHMITT-NILSON, HIRSCH

Date of mailing(day/month/year)  
10 July 2003 (10.07.03)

Applicant's or agent's file reference  
K 57 811/8

## IMPORTANT NOTICE

International application No.  
PCT/EP02/14779

International filing date(day/month/year)  
27 December 2002 (27.12.02)

Priority date(day/month/year)  
28 December 2001 (28.12.01)

Applicant

MAGNET-MOTOR GESELLSCHAFT FÜR MAGNETMOTORISCHE TECHNIK MBH

1. Notice is hereby given that the International Bureau has communicated, as provided in Article 20, the international application to the following designated Offices on the date indicated above as the date of mailing of this notice:

None

In accordance with Rule 47.1(c), third sentence, those Offices will accept the present notice as conclusive evidence that the communication of the international application has duly taken place on the date of mailing indicated above and no copy of the international application is required to be furnished by the applicant to the designated Office(s).

2. The following designated Offices have waived the requirement for such a communication at this time:

None

The communication will be made to those Offices only upon their request. Furthermore, those Offices do not require the applicant to furnish a copy of the international application (Rule 49.1(a-bis)).

3. Enclosed with this notice is a copy of the international application as published by the International Bureau on 10 July 2003 (10.07.03) under No. 03/056685

4. **TIME LIMITS** for filing a demand for international preliminary examination and for entry into the national phase

The applicable time limit for entering the national phase will, subject to what is said in the following paragraph, be 30 MONTHS from the priority date, not only in respect of any elected Office if a demand for international preliminary examination is filed before the expiration of 19 months from the priority date, but also in respect of any designated Office, in the absence of filing of such demand, where Article 22(1) as modified with effect from 1 April 2002 applies in respect of that designated Office. For further details, see *PCT Gazette* No. 44/2001 of 1 November 2001, pages 19926, 19932 and 19934, as well as the *PCT Newsletter*, October and November 2001 and February 2002 issues.

In practice, time limits other than the 30-month time limit will continue to apply, for various periods of time, in respect of certain designated or elected Offices. For regular updates on the applicable time limits (20, 21, 30 or 31 months, or other time limit). Office by Office, refer to the *PCT Gazette*, the *PCT Newsletter* and the *PCT Applicant's Guide*, Volume II, National Chapters, all available from WIPO's Internet site, at <http://www.wipo.int/pct/en/index.html>.

For filing a demand for international preliminary examination, see the *PCT Applicant's Guide*, Volume I/A, Chapter IX. Only an applicant who is a national or resident of a PCT Contracting State which is bound by Chapter II has the right to file a demand for international preliminary examination (at present, all PCT Contracting States are bound by Chapter II).

It is the applicant's sole responsibility to monitor all these time limits.

The International Bureau of WIPO  
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